

Milliken (S. E.)

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AND ITS

ASSOCIATION WITH HERNIA.

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Lecturer on Surgery at the New York Polyclinic.

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Lateral Curvature of the Spine and its Association with Hernia.*

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It is pretty well agreed, that attempts to correct the rotation of the spine, which so frequently accompanies lateral curvature, has proven anything but satisfactory. The recognition of the deformity in its incipency, or the detection of any impairment in the patient's physical condition, that may lead to such deviation in the spinal column, is all important. It was in noting the physical condition of children in the hernia department of the Hospital for the Ruptured and Crippled, that my attention was called to the frequency of such deformities, in varying degrees, that had not been recognized by the family. The pathological conditions of each (hernia and lateral curvature) will, I think, account for the frequency with which they occur in the same individual.

Causation.—The two theories as to the cause of hernia, as Wood gives them, are,—First, “the chief cause of rupture consists in the inefficiency of the tendinous or muscular-containing walls of the abdominal cavity in resisting the pressure from within;” second, “mesenteric elongation.” The former theory has by far the greater number of supporters. The supposed cause of lateral curvature of the spine, in addition to a general impairment in the physical condition, particularly of the muscular system, is the greater weight of certain internal organs on one side of the body; the liver being thought to account for the frequency of curvature to the right side. Right-handedness has been given; but occasionally a deviation may be found to the left in right-handed subjects, and *vice versa*.

In my opinion, the majority of the cases are dependent on a lack of development of the muscles supporting the spinal column, aggravated by the faulty positions assumed. The latter cause is particularly noticeable in school children and factory girls. The association of my two subjects, when looked into more carefully, may be questioned, as it is a well-known fact that girls are more frequently afflicted with lateral curvature, while boys are more often the subjects of hernial conditions. The girls do not have so much out-of-door exercise as boys, and there is added to this, the usual atony of the muscles just prior to the first appearance of the menstrual flow. On the other hand, the greater size of the cord structures in boys, as contrasted with the round ligament in girls, will, in a great measure, account for the preponderance of

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inguinal hernia in the former sex. In both sexes, however, I have been surprised at the frequency with which hernia and lateral curvature co-existed, particularly where trusses had been worn for a length of time. I am not convinced but that badly fitting trusses, causing the patient to assume unnatural positions, have something to do with producing or increasing the spinal deformity.

Examination.—After a thorough inspection of the spine in the position that the patient assumes with the greatest ease, note the relations of the inferior angle of each scapula to the spinous processes and to each other; the extent to which the head and neck are held forward, and the relation of one shoulder to the other.

The patient had best be photographed in the *worst* position. It will afford about the best means of recording the deformity that we have at our disposal. At this examination, photographs should be taken that will show to what extent the deformity may be corrected by position. Even in well advanced cases it is sometimes possible almost entirely to correct the lateral deviation. The extent to which rotation has advanced can be made out by having the patient bend forward, the body being held at a right angle to the lower extremities, and the arms allowed to hang loosely in front. The prominence of the side toward which the curvature tends will, as a rule, be more marked than the degree of curvature would lead one to suspect. The chest circumference should be taken, and the thoracic expansion. Another very important measurement to be made is the length of the limbs. Should one be found shorter than the other, a high shoe must be placed on the foot of that side, which will tend to lessen the spinal deformity.

Treatment.—The degree of curvature will have a great deal to do with the results from treatment, which has been divided into (1) postural, (2) gymnastic, (3) mechanical. We must admit that it is difficult to distinguish between the first two, and I should prefer to make it (1) gymnastic, (2) mechanical. It has been advised to combine the two, which seems entirely impracticable, as the use of the brace will only keep the muscles at rest, that should be supporting the body.

From posture alone, the narrowness of the chest can be rapidly overcome, so that the wearing apparel will soon need to be changed. This suggests the importance of the proper kind of waists to be worn by children under treatment: They should be few in number, and of greater thickness. The underwear, as well as the dress, must not only be loose in front, but in the back as well. Should the latter detail be overlooked, the patient will very soon be found depending on the garment for support, instead of on the back muscles.

General Gymnasium Work.—I question the advisability of allowing children afflicted with lateral curvature of the spine to go into the gymnasium and do the routine exercises. The inefficiency of such a course has been brought to my notice from examinations of school children, who were required to exercise two days a week with dumb-bells, Indian clubs, horizontal bars, etc.

Medical Gymnastics.—While there are a certain number of exercises that can be prescribed in almost every case, special movements, executed frequently in the presence of the physician, will afford the best results. The mother, or some other member of the family, should be present at each visit, that she may be able to criticise the patient when exercising at home. The best hours for exercise are on rising in the morning and just before retiring at night. The chest should be bare, and a photograph of each position should be in front of the patient. The exercises should be gone through with before a large mirror. No one movement should be continued until the patient is fatigued, and the whole series should be gone over twice, during the thirty or forty minutes allotted to it. With a well fitting truss, not only may the spinal muscle be exercised without any danger of the hernia's protruding, but the most violent

strain on the abdominal muscles may be allowed with perfect safety. The last named muscles are developed by having the patient assume the dorsal decubitus on a bed or lounge, with the arms folded across the chest, the feet being steadied by some one, the body is brought slowly to the sitting and back to the recumbent position, for fifty or a hundred times, according to the strength of the patient. In delicate children the relaxed linea alba will be quite noticeable when the recti are put on the stretch in this way.

Mechanical.—No case should be permitted to wear a brace, that is old enough to understand the exercises; even then massage should be tried before beginning mechanical treatment. The support, whether made by a plaster-of-Paris corset, or any other spinal support, must be harmful, in that it produces muscular atrophy.

In advanced cases of deformity, where exercises have failed to relieve the symptoms, and when the bony deformity is increasing, the last resort is a brace.

Mechanical treatment will not be dwelt with further, other than to say that I prefer the plaster-of-Paris corset, applied with the patient self-suspended.

These few remarks have been made to express my convictions in behalf of gymnastic exercises, after careful observations of patients in private and hospital practice, and with a hope of encouraging early diagnosis.

157 MADISON AVENUE.

